

THE MINERAL INDUSTRIES OF THE ISLANDS OF THE CARIBBEAN

ARUBA, THE BAHAMAS, BARBADOS, DOMINICAN REPUBLIC, JAMAICA, TRINIDAD AND TOBAGO, AND OTHER ISLANDS

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ARUBA

In 2004, the mining sector continued to play a minor role in the economy of Aruba. The country, which is located in the Caribbean Sea approximately 29 kilometers (km) off the Paraguana Peninsula of northern Venezuela, produced about 80,000 barrels (bbl) of petroleum refinery products and about 65,000 metric tons (t) of sulfur in 2004 (table 1).

THE BAHAMAS

The Bahamas is a group of islands that is located in the Caribbean Sea to the southeast of Florida. Mining played a minor role in the country's economy. In 2004, mining was limited to the production of salt and aragonite, which totaled about 1.3 million metric tons (Mt) and about 19,918 t, respectively (table 1).

BARBADOS

Barbados is located to the east of the main chain of the Lesser Antilles on the boundary between the Caribbean Sea and the Atlantic Ocean. In 2004, the principal mineral fuels produced were natural gas (20 million cubic meters) and petroleum (378,000 bbl). Industrial mineral production included limestone (1.9 Mt), sand (500,000 t), hydraulic cement (322,270 t), and clay and shale (144,900 t).

DOMINICAN REPUBLIC

The Dominican Republic is located on the eastern portion of the Caribbean island of Hispaniola. Mineral production in the Dominican Republic was limited to the production of bauxite, cement, ferronickel, gypsum, salt, and steel. Limestone, marble, and sand and gravel were also produced solely for domestic consumption. Amber, limestone, and pectolite (larimar) were produced in modest amounts by six small artisanal mining associations. In 2004, the country produced about 2.6 Mt of hydraulic cement, 79,498 t of bauxite, and 10,384 cubic meters of marble (table 1). Ferronickel was produced by Falconbridge Dominicana C. por A. (Falcondo) (a subsidiary of Falconbridge Ltd. of Canada). The company mined, milled, and smelted its own nickel laterite ores. In 2004, Falcondo produced 29,477 t of nickel in ferronickel (table 1). The Dominican Republic did not produce petroleum. The country imported petroleum and refined products from Mexico and Venezuela. Petroleum was refined at Bonao by Falcondo and at Haina by Refinería Dominicana de Petróleo.

JAMAICA

Jamaica, which is the third largest island of the Greater Antilles, is located about 150 km south of Cuba and about 160 km west of Haiti. Mineral production in Jamaica was limited to the production of alumina, bauxite, cement, gold, gypsum, lime, limestone, refined petroleum products, salt, and other construction materials. The country ranked among the world's leading producers of alumina and bauxite. In 2004, bauxite and alumina production amounted to about 13.3 Mt and 4 Mt, respectively (table 1). Production of cement was about 800,000 t; gypsum was 283,352 t; and lime was about 269,139 t. Jamaica depended on imported petroleum for most of its energy needs. Most of the crude petroleum was imported from Mexico and Venezuela under the San José Accord. The country had one petroleum refinery, which processed crude petroleum into asphalt, automobile diesel oil, heavy fuel oil, liquefied petroleum gas, turbo fuel, and unleaded gasoline.

TRINIDAD AND TOBAGO

Trinidad and Tobago, which forms the southernmost islands of the Caribbean archipelago, is located northeast of Venezuela and northwest of Guyana. The leading industries in the country were chemicals, natural gas, petroleum, and tourism. Besides natural gas and petroleum, Trinidad also produced asphalt, cement, direct-reduced iron, limestone, natural gas liquids, and steel. In 2004,

production of natural gas increased by about 13% to 30,273 million cubic meters compared with the 26,810 million cubic meters produced in 2003 (table 1).

OTHER ISLANDS OF THE CARIBBEAN

The mineral industries of other islands of the Caribbean (Antigua and Barbuda, Bermuda, Dominica, Grenada, Guadeloupe and Martinique, Haiti, Montserrat, the Netherlands Antilles, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines) were small. Mineral production was limited mostly to cement, construction materials for domestic consumption, and salt. Petroleum refinery products were produced in Martinique and the Netherlands Antilles.

More-extensive coverage of the mineral industries of Aruba, The Bahamas, Barbados, Dominican Republic, Jamaica, Trinidad and Tobago, and other islands of the Caribbean can be found in the 2002 and 2003 U.S. Geological Survey Minerals Yearbook, volume III, Area Reports—International—Latin America and Canada, which are available on the World Wide Web at URL <http://minerals.usgs.gov/minerals/pubs/country>.

TABLE 1
ISLANDS OF THE CARIBBEAN: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Country and commodity	2000	2001	2002	2003 ^e	2004 ^e
ARUBA^{e, 2}					
Petroleum refinery products thousand 42-gallon barrels	100,000	100,000	100,000	65,000 ^{r, 3}	80,000 ^{3, 6}
Sulfur, byproduct of petroleum	77,000	77,000	77,000	60,000 ^{r, 3}	65,000 ³
BAHAMAS, THE^{e, 4}					
Salt	900,000	900,000	900,000	1,341,755 ^{r, 3}	1,269,209 ³
Stone, argonite	1,200,000	1,200,000	1,200,000	98,482 ^{r, 3}	19,918 ³
BARBADOS^{4, 5}					
Cement:					
Hydraulic	267,659	249,544 ⁶	297,667 ⁶	325,106 ^{r, 3, 6}	322,270 ^{3, 6}
Clinker	NA	241,899 ⁶	284,009 ⁶	300,291 ^{r, 3, 6}	291,445 ^{3, 6}
Clay and shale	150,000	132,000 ⁶	132,000 ⁶	138,000 ^{r, 6}	144,900 ^{3, 6}
Limestone	1,500,000 ^e	1,730,000 ⁶	1,230,000 ⁶	1,785,000 ^{r, 3, 6}	1,874,250 ^{3, 6}
Liquefied petroleum gas 42-gallon barrels	20,000 ^e	17,587 ⁶	11,011 ⁶	3,690 ^{r, 6}	-- ⁶
Natural gas:					
Gross million cubic meters	38	32 ⁶	29 ⁶	23 ^{r, 6}	20 ⁶
Marketed do.	15 ^e	16 ⁶	14 ⁶	12 ^{r, 6}	13 ⁶
Petroleum, crude thousand 42-gallon barrels	560	464	391	371 ^{r, 6}	378 ⁶
Sand ^e	200,000	550,000	500,000	500,000 ⁶	500,000 ⁶
DOMINICAN REPUBLIC					
Bauxite	--	--	--	6,481 ^{3, 7}	79,498 ^{3, 7}
Cement, hydraulic ⁸	2,505,461	2,745,980	3,050,430	2,783,167 ^{r, 3, 7}	2,636,274 ^{3, 7}
Clay	NA	NA	314 ⁸	16,113 ^{r, 3, 7}	32,588 ^{3, 7}
Gypsum ⁹	110,044	175,553 ⁷	163,026	250,286 ^{r, 3, 7}	459,496 ^{3, 7}
Iron and steel:					
Ferroalloys, ferronickel	84,900	60,654 ⁸	58,101 ⁸	69,628 ^{r, 3, 9}	75,763 ^{3, 9}
Steel, crude	35,801	32,521 ⁸	60,956 ⁸	61,000	61,000
Lime thousand metric tons	NA	NA	113 ⁸	102 ^{3, 8}	100
Limestone do.	703	530 ⁷	1,115 ⁸	1,607 ^{r, 3}	1,214 ³
Marble ⁸ cubic meters	4,057	5,420 ⁷	6,333	8,186 ^{r, 3}	10,384 ³
Nickel, Ni content:					
Mine output, laterite ore	39,943	39,120 ⁸	38,859 ⁸	45,253 ^{r, 3, 9}	46,000 ^{3, 9}
Metal, ferronickel:					
Smelter	27,829	21,661 ⁸	23,303 ⁸	27,227 ^{3, 9}	29,477 ^{3, 9}
Shipments	27,226	23,411 ⁸	22,945 ⁸	26,486 ^{r, 3, 9}	28,327 ^{3, 9}
Petroleum refinery products: ^e					
Liquefied petroleum gas thousand 42-gallon barrels	450	450	450	450	500
Gasoline, motor do.	1,900	1,900	1,900	1,900	2,000
Kerosene do.	90	90	90	90	100
Jet fuel do.	1,800	1,800	1,800	1,800	1,900
Distillate fuel oil do.	2,700	2,700	2,700	2,700	2,900
Residual fuel oil do.	4,400	4,400	4,400	4,400	4,600
Total do.	11,300	11,300	11,300	11,300	12,000
Salt:					
Marine ^e	50,000	50,000	50,000	50,000 ^r	50,000
Rock	162,851	189,595	157,278 ⁸	106,988 ^{3, 8}	--
Total	212,851	239,595	207,278	156,988 ^{r, 3, 8}	50,000
Sand and gravel ⁸ thousand cubic meters	16,246	15,486	15,977 ^r	14,374 ^{r, 3}	13,266 ³
GUADELOUPE^{e, 4, 10}					
Cement	265,200 ³	265,200 ³	229,500 ³	229,500 ³	230,000
Limestone	5,000	5,000	5,000	5,000	5,000
Pumice	210,000	210,000	210,000	210,000	210,000
Salt	49,000	49,000	49,000	49,000	49,000
HAITI^{e, 11}					
Cement	--	203,768 ³	290,298 ³	290,300 ³	290,000

See footnotes at end of table.

TABLE 1--Continued
ISLANDS OF THE CARIBBEAN: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Country and commodity	2000	2001	2002	2003 ^e	2004 ^e
HAITI--Continued ^{e, 11}					
Sand and gravel:					
Gravel cubic meters	450,000 ³	450,000	450,000	450,000	450,000
Sand do.	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Stone, marble cubic meters	131 ³	131	131	131	131
JAMAICA					
Aluminum: ¹²					
Bauxite, dry equivalent, gross weight thousand metric tons	11,127	12,370	13,119 ¹³	13,445 ^{r, 3, 13}	13,297 ^{3, 13}
Alumina do.	3,600	3,542	3,631 ¹³	3,844 ^{r, 3, 13}	4,021 ^{3, 13}
Cement, hydraulic ¹²	521,343	596,247	613,981 ¹³	607,682 ^{r, 3, 13}	808,070 ^{3, 13}
Clay ¹²	--	91	66 ¹³	81 ^{3, 13}	525 ^{3, 13}
Gold ¹² kilograms	--	214	328 ¹³	277 ^{3, 13}	18 ¹³
Gypsum ¹²	330,441	320,323	164,880 ¹³	248,558 ^{3, 13}	283,352 ^{3, 13}
Lime ¹²	267,215	281,853	255,266 ¹³	275,763 ^{3, 13}	269,139 ^{3, 13}
Petroleum refinery products thousand 42-gallon barrels	3,600	3,600 ^e	3,600 ^e	3,600	3,600
Salt	19,068	19,070	19,000 ^e	19,000	19,000
Silica sand ¹²	6,700	8,244	9,367 ¹³	12,825 ^{3, 13}	11,172 ^{3, 13}
Silver kilograms	--	95	174 ¹³	92 ^{r, 3, 13}	9 ¹³
Stone: ¹³					
Limestone thousand metric tons	3,420	3,488	3,522 ¹³	3,593 ^{3, 13}	2,500 ¹³
Marble, cut and/or polished	150	150	150 ^{r, 13}	155 ^{3, 13}	120 ¹³
Marl and fill thousand metric tons	4,720	5,422	5,693 ¹³	6,376 ^{3, 13}	5,900 ¹³
Sand and gravel do.	2,100	2,205	2,249 ¹³	2,316 ^{3, 13}	2,200
Shale, for cement	NA	151,277	144,205 ¹³	217,005 ^{3, 13}	184,993 ^{3, 13}
MARTINIQUE ^{e, 4, 10}					
Cement, hydraulic	254,800 ³	255,000 ³	220,500 ³	221,000 ³	221,000
Lime	5,000	5,000	5,000	5,000	5,000
Petroleum refinery products thousand 42-gallon barrels	4,800	4,800	4,800	4,800	4,800
Pumice	130,000	130,000	130,000	130,000	130,000
Salt	200,000	200,000	200,000	200,000	200,000
NETHERLANDS ANTILLES ^{e, 2}					
Petroleum refinery products thousand 42-gallon barrels	80,000	80,000	80,000	80,000	80,000
Salt	500,000	500,000	500,000	500,000	500,000
Sulfur, byproduct of petroleum	30,000	30,000	25,000 ^r	23,000 ^r	23,000
SAINT KITTS AND NEVIS					
Sand and gravel	214,700	215,000 ^e	227,700	223,000	223,000
Stone, crushed	121,266	121,270	130,800	131,000	131,000
TRINIDAD AND TOBAGO					
Asphalt, natural ¹⁴	9,900	16,216	16,203	16,200	16,200
Cement, hydraulic	742,645 ¹⁴	696,800 ¹⁴	743,700 ¹⁴	765,600 ^{3, 15}	768,400 ^{3, 16}
Iron and steel: ¹⁵					
Direct-reduced iron	1,530,000 ¹⁵	2,186,382 ¹⁵	2,316,300 ¹⁵	2,275,000 ^{3, 15}	2,336,500 ^{3, 16}
Steel, crude	753,125	696,111	838,900	923,000	783,000
Semimanufactures, billets	723,000 ¹⁵	668,267 ¹⁵	816,900 ¹⁵	896,000 ^{3, 15}	789,800 ^{3, 16}
Lead, refined, secondary ^e	1,600	1,600	1,600	1,000	1,000
Natural gas:					
Gross million cubic meters	15,483 ¹⁶	16,599 ¹⁶	19,172 ¹⁴	26,810 ^{3, 14}	30,273 ^{3, 16}
Marketed do.	14,170 ¹⁶	15,173 ¹⁶	17,777 ¹⁴	26,046 ^{3, 14}	29,456 ^{3, 16}
Natural gas liquids thousand 42-gallon barrels	6,932 ¹⁶	7,521 ¹⁶	8,505 ¹⁴	10,500 ¹⁴	10,687 ^{3, 16}
Nitrogen, N content of anhydrous ammonia	2,679,669 ¹⁶	3,036,307 ¹⁶	3,258,619 ¹⁴	3,529,000 ^{3, 14}	3,875,300 ³
Petroleum:					
Crude thousand 42-gallon barrels	43,680 ^{r, 14}	41,469 ^{r, 14}	47,824 ^{r, 14}	49,117 ^{r, 3, 16}	44,985 ^{3, 16}
Refinery products do.	57,543 ¹⁴	54,818 ¹⁴	54,788 ¹⁴	52,876 ^{r, 3, 16}	46,349 ^{3, 16}
Stone, limestone ¹⁴ thousand metric tons	1,815	975	851	850	850
Sulfur, byproduct of petroleum ^{e, 17}	15,000	15,000	14,000 ^r	29,000 ^r	29,000
Urea	NA	NA	310,100 ³	297,600 ³	284,900 ³

See footnotes at end of table.

TABLE 1--Continued
ISLANDS OF THE CARIBBEAN: PRODUCTION OF MINERAL COMMODITIES¹

⁶Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ¹Revised. NA Not available. -- Zero.

¹Table includes data available through September 2005.

²In addition to commodities listed, crude construction materials (lime, sand, stone, etc.) may also be produced, but data on such production are not available, and information is inadequate to make reliable estimates of output levels.

³Reported figure.

⁴In addition to commodities listed, crude construction materials (sand and gravel, etc.) may be also produced, but data on such production are not available, and information is inadequate to make reliable estimates of output levels.

⁵Barbados also produced stone, but data on such production are not available, and information is inadequate to make reliable estimates of output levels

⁶Ministry of Energy and Public Utilities of Barbados.

⁷Source: Dirección General de Minería de la República Dominicana.

⁸Source: Banco Central de la República Dominicana.

⁹Source: Falconbridge Dominicana C. por A.

¹⁰Guadeloupe and Martinique also produced stone, but data on such production are not available, and information is inadequate to make reliable estimates of output levels.

¹¹In addition to commodities listed, asphalt, lime, and salt may also be produced, but data on such production are not available, and information is inadequate to make reliable estimates of output levels.

¹²Source: Ministry of Mining and Energy of Jamaica.

¹³Source: Ministry of Land and Environment of Jamaica.

¹⁴Source: Ministry of Energy and Energy Industries of Trinidad and Tobago.

¹⁵Source: Caribbean Ispat Limited.

¹⁶Source: Central Bank of Trinidad and Tobago Annual Economic Survey.

¹⁷Sulfur as a byproduct of natural gas may be produced, but information is inadequate to make reliable estimates of output.